



# Use Attainability Analysis

for

WBID 1220 Bear Creek

Submitted by  
BWR

June 29, 2007

Submitted to:  
Missouri Department of Natural Resources  
Division of Environmental Quality  
Water Protection Program

## Field Data Sheets for Recreational Use Stream Surveys

### Data Sheet A - Water Body Identification

#### I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad):	BEAR CREEK		
Missouri Water Body Identification (WBID) Number:	#1220		
8-digit HUC:	10290108	County:	HENRY
Upstream Legal Description (from Table H):	17,40N, 27W		
Downstream Legal Description (from Table H):	Mouth		
Number of sites evaluated	4		
List all sites numbers, listed consequently upstream to downstream:	4, 3, 1, 2		

**Site Locations Map(s):** Attach a map of entire segment with assessment sites clearly labeled. Mark any other items that may be of interest.

#### II. Subsegmentation (fill this section out only in cases where subsegmentation is being proposed)

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)			
Upstream Coordinates:		Downstream Coordinates:	
UTM X	Y	UTM X	Y
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)			
Global Positioning System (GPS)		Interpolation	
Static Mode		Topographic Map or DRG	
Dynamic Mode (Kinematic)		Aerial Photograph or DOQQ	
Precise Positioning Service		Satellite Imagery	
Signal Averaging		Interpolation Other	
Real Time Differential Processing			
HORIZONTAL ACCURACY ESTIMATE			
GPS Data Quality		Interpolation Data Quality	
FOM	± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____	
EPE	± _____ Feet or ± _____ Meters		
PDOP		± _____ Feet or ± _____ Meters	

#### III. Discharger Facility Information (list all permitted dischargers on the stream)

Discharger Facility Name(s):	MONTROSE WWTF
Discharger Permit Number(s):	MO0091723

#### IV. UAA Surveyor (please print legibly)

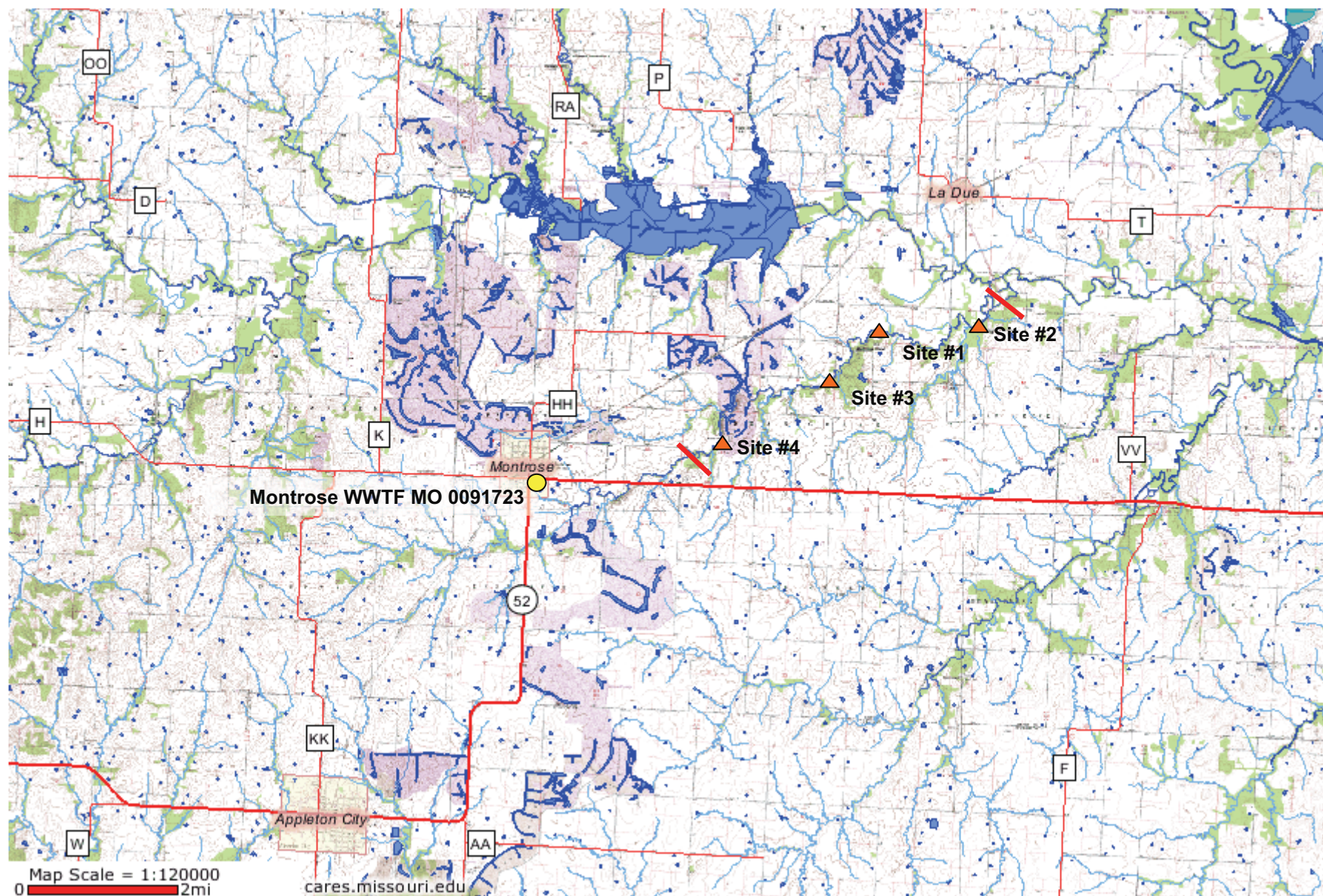
Name of Surveyor	Alan Mitchell	Telephone Number:	(816) 363-2690
Organization/Employer:	EAE		
Position:	Environmental Scientist		

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Signed: Alan Mitchell

February 5, 2007

Date: May 23, 2007



Bear Creek  
WBID #1220



WBID# 1220  
Site# 1

**Field Data Sheets for Recreational Use Stream Surveys**  
**Data Sheet B - Site Characterization**  
(must be completed for each site)

Date & Time: <u>06/20/07</u>	Site Location Description (e.g., road crossing): <u>Bridge crossing @ RD 651 (Upstream)</u>
Personnel (Data Collectors): <u>Louise Bartlett</u>	
Current Weather Conditions: <u>Overcast, ~75</u>	Facility Name: <u>MONTROSE WWTF</u>
Weather Conditions for Past 10 days: <u>Fair, Rain</u>	Permit Number: <u>MO0091723</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Locations:**

<b>LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)</b>	
Site GPS Coordinates: UTM X: <u>38.2410</u>	Y: <u>093.87920</u>
<b>HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)</b>	
<b>Global Positioning System (GPS)</b>	<b>Interpolation</b>
Static Mode	Topographic Map or DRG
Dynamic Mode (Kinematic)	Aerial Photograph or DOQQ
Precise Positioning Service	Satellite Imagery
Signal Averaging	Interpolation Other
Real Time Differential Processing	
<b>HORIZONTAL ACCURACY ESTIMATE</b>	
<b>GPS Data Quality</b>	<b>Interpolation Data Quality</b>
FOM ± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters
EPE ± _____ Feet or ± _____ Meters	
PDOP	

**Photos:**

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>1220-34</u>	<u>Trans R-J</u>	<u>1220-1,2</u>	<u>Trans B-A</u>		

**Uses Observed\*:** (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

**Indications of Human Use\*:** (attach photos)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	

Comments:

RD 651

\* Page Two – Data Sheet B for WBID # 1220 :  
Stream Morphology:

CHANNEL FEATURE %  
RUN: 40% RIFFLE: \_\_\_\_\_  
~~RIFFLE~~  
POOL: 60%

Upstream View's Physical Dimensions: Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate\*: (These values should add up to 100%.)

<u>60</u> % Cobble	<u>10</u> <del>30</del> % Gravel	% Sand	<u>10</u> % Silt	% Mud/Clay	<u>20</u> % Bedrock
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Aquatic Vegetation\*: (Note amount of vegetation or algal growth at the assessment site)

NONE observed

Water Characteristics\*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input checked="" type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments () to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: [Signature] Date of Survey: 6/20/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

Site #

T<sub>A</sub>

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 WETTED WIDTH	0.2		1 CHANNEL FEATURE:	
2 4.8 m	0.2		2 RUN 100%	
3	0.2		3	
4 MEASUREMENTS	0.2		4 DISSOLVED OXYGEN:	
5 0.48 m	0.1		5 8.12	
6 APART	0.1		6	ppm
7	0.1		7	
8	0.1		8	
9	0.1		9	
10	0.1		10	

T<sub>B</sub>

1 WETTED WIDTH	0.1		12 CHANNEL FEATURE:	
2 5.0 m	0.3		13 RUN 100%	
3	0.4		14	
4 MEASUREMENTS	0.4		15 DISSOLVED OXYGEN:	
5 0.50 m	0.3		16 8.32	
6 APART	0.3		17	ppm
7	0.3		18	
8	0.3		19	
9	0.3		20	
10	0.3		21	

T<sub>C</sub>

1 WETTED WIDTH	0.1		22 CHANNEL FEATURE:	
2 3.0 m	0.2		23 RUN 100%	
3	0.1		24	
4 MEASUREMENTS	0.1		25 DISSOLVED OXYGEN:	
5 0.30 m	0.1		26 8.40	
6 APART	0.1		.	ppm
7	0.2		.	
8	0.1		n	
9	0.1			
10	0.1			

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed:

*[Signature]*

Date:

6/20/07

Organization:

BWR CORP

Position:

Env. Sci.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

Site 1

T<sub>D</sub>

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1	WETTED WIDTH	0.2		1 CHANNEL	FEATURE :
2	3.2 m	0.2		2 RVN	100%
3		0.1		3	
4	MEASUREMENTS	0.1		4 DISSOLVED	OXYGEN :
5	0.32 m	<0.1		5 8.18	
6	APART	<0.1		6	ppm
7		<0.1		7	
8		<0.1		8	
9		<0.1		9	
10				10	
				11 CHANNEL	FEATURE :
1	WETTED WIDTH	0.2		12 RVN	
2	3.4 m	0.2		13	
3		0.1		14 DISSOLVED	OXYGEN :
4	MEASUREMENTS	0.2		15 8.38	
5	0.34 m	0.2		16	ppm
6	APART	0.2		17	
7		0.1		18	
8		0.1		19	
9		<0.1		20	
10		<0.1		21	
				22 CHANNEL	FEATURE :
1	WETTED WIDTH	0.5		23 <del>8.2</del>	POOL
2	5.5 m	0.5		24	
3		0.6		25	
4	MEASUREMENTS	0.8		26 DISSOLVED	OXYGEN :
5	0.55 m	0.9		8.33	
6	APART	0.8		.	ppm
7		0.6		.	
8		0.4		n	
9		0.2			
10		0.1			

T<sub>F</sub>

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 6/20/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

Site 1

T<sub>G</sub>

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1	WETTED WIDTH	0.3		1	CHANNEL FEATURE :
2	5.7 m	0.5		2	POOL
3		0.5		3	
4	MEASUREMENTS	0.4		4	DISSOLVED OXYGEN :
5	0.57 m	0.4		5	8.34
6	APART	0.3		6	
7		0.3		7	ppm
8		0.3		8	
9		0.2		9	
10		0.1		10	
				11	
1	WETTED WIDTH	0.2		12	CHANNEL FEATURE :
2	5.3	0.2		13	POOL
3		0.2		14	
4	MEASUREMENTS	0.2		15	DISSOLVED OXYGEN :
5	0.53 m	0.3		16	8.61
6	APART	0.4		17	
7		0.4		18	ppm
8		0.3		19	
9		0.2		20	
10		0.1		21	
				22	
1	WETTED WIDTH	0.2		23	CHANNEL FEATURE :
2	5.0	0.2		24	POOL
3		0.3		25	
4		0.3		26	DISSOLVED OXYGEN :
5	MEASUREMENTS	0.3		.	8.25
6	0.50 m	0.2		.	
7	APART	0.1		.	ppm
8		0.1		n	
9		0.2			
10		0.2			

T<sub>H</sub>

T<sub>I</sub>

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature]

Date: 6/20/07

Organization: BWR CORP.

Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

Site 1

TJ

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1	WETTED WIDTH	0.2		1	CHANNEL FEATURE:
2	5.0 m	0.2		2	POOL
3		0.2		3	
4	MEASUREMENTS	0.3		4	DISSOLVED OXYGEN:
5	0.50 m	0.3		5	8.15
6	APART	0.3		6	
7		0.3		7	ppm
8		0.2		8	
9		0.2		9	
10		0.1		10	
				11	
1	WETTED WIDTH	40.1		12	CHANNEL FEATURE:
2	5.9 m	0.3		13	POOL
3		0.3		14	
4	MEASUREMENTS	0.3		15	DISSOLVED OXYGEN:
5	0.59 m	0.2		16	7.96
6	APART	0.3		17	
7		0.2		18	ppm
8		0.1		19	
9		0.1		20	
10		40.1		21	
				22	
				23	
				24	
				25	
				26	
				.	
				.	
				.	
				n	

TK

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 6/20/07

Organization: BWR CORP. Position: ENV. SCI.

WBID# 1220  
Site# 2

**Field Data Sheets for Recreational Use Stream Surveys**  
**Data Sheet B - Site Characterization**  
(must be completed for each site)

Date & Time: <u>06/20/07</u>	Site Location Description (e.g., road crossing): <u>Bridge Crossing @ RD 550</u>
Personnel (Data Collectors): <u>Lunt &amp; Bartlett</u>	
Current Weather Conditions: <u>Overcast, ~75</u>	Facility Name: <u>MONTROSE WWTF</u>
Weather Conditions for Past 10 days: <u>Fair, Rain</u>	Permit Number: <u>MO0091723</u>
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)	
Site GPS Coordinates: UTM X: <u>38,29039</u>	Y: <u>093,86850</u>
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)	
Global Positioning System (GPS)	Interpolation
Static Mode	Topographic Map or DRG
Dynamic Mode (Kinematic)	Aerial Photograph or DOQQ
Precise Positioning Service	Satellite Imagery
Signal Averaging	Interpolation Other
Real Time Differential Processing	
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM ± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters
EPE ± _____ Feet or ± _____ Meters	
PDOP	

**Photos:**

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>1220-5,6</u>	<u>Transect J-K</u>	<u>1220-7,8</u>	<u>Transect B-A</u>		

**Uses Observed\*:** (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use <i>Data Sheet D- Recreational Use Interview</i> when conducting interviews.)				

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

**Indications of Human Use\*:** (attach photos)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: <u>Rd 550</u>					

CHANNEL FEATURE %  
 RUN: 40% RIFFLE: 20%  
~~RIFFLE~~  
 POOL: 40%

\* Page Two – Data Sheet B for WBID # 1220 :

**Stream Morphology:**

**Upstream View's Physical Dimensions:** Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

**Select one of the following channel features:**

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

**Downstream View's Physical Dimensions:** Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

**Select one of the following channel features:**

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

**Substrate\*:** (These values should add up to 100%.)

% Cobble	<u>15</u>	% Gravel		% Sand	<u>15</u>	% Silt	<u>70</u>	% Mud/Clay		% Bedrock
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**Aquatic Vegetation\*:** (Note amount of vegetation or algal growth at the assessment site)

NONE observed

**Water Characteristics\*:** (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

**Comments:** Please attach any additional comments () to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: [Signature] Date of Survey: 6/20/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

SHEZ

TA

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 WETTED WIDTH	0.2		1 CHANNEL FEATURE:	
2 3.0	0.3		2 RUN	
3	0.4		3	
4 MEASUREMENTS	0.6		4 DISSOLVED OXYGEN:	
5 0.30 m	0.6		5 8.71	
6 APART	0.6		6	ppm
7	0.5		7	
8	0.4		8	
9	0.3		9	
10	0.2		10	
			11	

TB

1 WETTED WIDTH	0.1		12 CHANNEL FEATURE:	
2 2.8	0.1		13 RUN	
3	0.2		14	
4 MEASUREMENTS	0.3		15 DISSOLVED OXYGEN:	
5 0.28 m	0.3		16 8.94	
6 APART	0.3		17	ppm
7	0.3		18	
8	0.3		19	
9	0.2		20	
10	0.1		21	

TC

1 WETTED WIDTH	0.3		22 CHANNEL FEATURE:	
2 3.2	0.3		23 RUN	
3	0.4		24	
4 MEASUREMENTS	0.3		25 DISSOLVED OXYGEN:	
5 0.32 m	0.3		26 7.98	
6 APART	0.3		.	ppm
7	0.2		.	
8	0.1		n	
9	0.1			
10	0.1			

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 6/20/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

Site 2

T<sub>D</sub>

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 WETTED WIDTH	< 0.1		1 CHANNEL	FEATURE :
2 1.0	0.1		2 RIFFLE	
3	0.1		3	
4 MEASUREMENTS	0.1		4 DISSOLVED	OXYGEN :
5 0.10 m	0.1		5 9.55	
6 APART	0.1		6	ppm
7	0.1		7	
8	< 0.1		8	
9	< 0.1		9	
10	< 0.1		10	
			11 CHANNEL	FEATURE :
1 WETTED WIDTH	0.2		12 Pool	
2 5.2 m	0.2		13	
3	0.3		14 DISSOLVED	OXYGEN :
4 MEASUREMENTS	0.3		15 9.35	
5 0.52 m	0.3		16	ppm
6 APART	0.3		17	
7	0.3		18	
8	0.2		19	
9	0.2		20	
10	0.1		21	
			22 CHANNEL	FEATURE :
1 WETTED WIDTH	0.1		23 RIFFLE	
2 1.3 m	0.2		24	
3	0.1		25	
4 MEASUREMENTS	0.1		26 DISSOLVED	OXYGEN :
5 0.13 m	0.1		.	9.56
6 APART	0.1		.	ppm
7	0.1		.	
8	0.1		n	
9	0.1			
10	< 0.1			

T<sub>F</sub>

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed:

*[Signature]*

Date:

6/20/07

Organization:

BWR CORP.

Position:

Env. Sci.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

Site 2

T<sub>G</sub>

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1	WETTED WIDTH	<0.1		1	CHANNEL FEATURE :
2	3.2	0.1		2	RUN
3		0.1		3	
4	MEASUREMENTS	0.1		4	DISSOLVED OXYGEN :
5	0.32 m	0.1		5	9.35
6	APART	0.1		6	
7		0.2		7	ppm
8		0.1		8	
9		0.1		9	
10		<0.1		10	
				11	
1	WETTED WIDTH	0.1		12	CHANNEL FEATURE :
2	3.4	0.2		13	RUN
3		0.3		14	
4	MEASUREMENTS	0.3		15	DISSOLVED OXYGEN :
5	0.34 m	0.4		16	9.37
6	APART	0.3		17	
7		0.2		18	ppm
8		0.2		19	
9		<0.1		20	
10		<0.1		21	
				22	
1	WETTED WIDTH	0.1		23	CHANNEL FEATURE :
2	3.5	0.1		24	RUN
3		0.2		25	
4		0.2		26	DISSOLVED OXYGEN :
5	MEASUREMENTS	0.2		.	8.30
6	0.35 m	0.2		.	
7	APART	0.2		.	ppm
8		0.2		n	
9		0.1			
10		<0.1			

T<sub>H</sub>

T<sub>I</sub>

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

Organization: \_\_\_\_\_

Position: \_\_\_\_\_

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

Site 2

TJ

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1	WETTED WIDTH	0.2		1 CHANNEL FEATURE:	
2	2.5	0.3		2 POOL	
3		0.4		3	
4	MEASUREMENTS	0.5		4 DISSOLVED OXYGEN:	
5	0.25 m	0.6		5 9.53	
6	APART	0.6		6	ppm
7		0.6		7	
8		0.3		8	
9		0.2		9	
10		0.1		10	
				11	
1	WETTED WIDTH	0.1		12 CHANNEL FEATURE:	
2	3.0 m	0.1		13 POOL	
3		0.2		14	
4	MEASUREMENTS	0.3		15 DISSOLVED OXYGEN:	
5	0.30 m	0.3		16 9.75	
6	APART	0.3		17	ppm
7		0.2		18	
8		0.1		19	
9		0.1		20	
10		0.1		21	
				22	
				23	
				24	
				25	
				26	
				.	
				.	
				.	
				n	

TK

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Sho Zalt Date: 6/20/07

Organization: BWR WPP. Position: ENV. SCI.

WBID# 1220  
 Site# 3

**Field Data Sheets for Recreational Use Stream Surveys**  
**Data Sheet B - Site Characterization**  
 (must be completed for each site)

Date & Time: <u>1:40pm 5/23/2007</u>	Site Location Description (e.g., road crossing): <u>at crossing near CR 608</u>
Personnel (Data Collectors): <u>Alan Mitchell</u> <u>Alex Bartlett</u>	
Current Weather Conditions: <u>Cloudy, Blistery</u>	Facility Name: <u>MONTROSE WWTF</u>
Weather Conditions for Past 10 days: <u>No Rain</u>	Permit Number: <u>MD0091723</u>
Drought Conditions?: No drought <input type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Locations:**

<b>LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION, IN METERS)</b>	
Site GPS Coordinates: UTM X: <u>93-903240W</u>	Y: <u>38.28183N</u>
<b>HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data.)</b>	
<b>Global Positioning System (GPS)</b>	<b>Interpolation</b>
Static Mode	Topographic Map or DRG
Dynamic Mode (Kinematic)	Aerial Photograph or DOQQ
Precise Positioning Service	Satellite Imagery
Signal Averaging	Interpolation Other
Real Time Differential Processing	
<b>HORIZONTAL ACCURACY ESTIMATE</b>	
<b>GPS Data Quality</b>	<b>Interpolation Data Quality</b>
FOM ± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters
EPE ± _____ Feet or ± _____ Meters	
PDOP	

**Photos:**

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
<u>69 &amp; 70</u>		<u>67 &amp; 68</u>			

**Uses Observed\*: (Uses actually observed at time of survey.)**

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

**Surrounding Conditions\*: (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)**

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Fence	<input type="checkbox"/> Steep slopes	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Comments:

**Indications of Human Use\*: (attach photos)**

<input type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	

Comments: No evidence of human use

\* Page Two – Data Sheet B for WBID # 1220 : SITE # 31  
Stream Morphology:

9% CHANNEL FEATURE  
RUN: 10  
RIFFLE:  
POOL: 90

Upstream View's Physical Dimensions: Is there any water present at this view? ☐ Yes ☒ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate\*: (These values should add up to 100%.)

% Cobble	<u>30</u>	% Gravel	<u>10</u>	% Sand		% Silt	<u>60</u>	% Mud/Clay		% Bedrock	
----------	-----------	----------	-----------	--------	--	--------	-----------	------------	--	-----------	--

Aquatic Vegetation\*: (Note amount of vegetation or algal growth at the assessment site)

Water Characteristics\*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments () to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: Alan D. Mitchell Date of Survey: May, 23, 2007

Organization: EAE, Inc. Position: Environmental Engineer

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 1220 Site # 3

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
Transect A	1 wetted width	<0.1		1 Channel Feature:	
	2 5.0 m	0.2		2 Riffle	30%
	3	0.2		3 POOL	70%
	4 measurements	0.4		4 Dissolved Oxygen	
	5 0.5 m	0.4		5	
	6 apart	0.4		6 10.87	ppm
	7	0.3		7 127.7	%
	8	0.2		8 23.8	°C
	9	0.2		9	
	10	0.1		10	
Transect B	1 wetted width	<0.1		11	
	2 4.0 m	0.2		12 Channel Feature:	
	3	0.3		13 RUN	100%
	4 measurements	0.4		14	
	5 0.4 m	0.5		15 Dissolved Oxygen:	
	6 apart	0.5		16	
	7	0.5		17 10.91	ppm
	8	0.4		18 126.5	%
	9	0.3		19 23.6	°C
	10	<0.1		20	
Transect C	1 wetted width	<0.1		21	
	2 1.3 m	0.1		22	
	3	0.1		23 Channel Feature:	
	4 measurements	0.1		24 POOL	70%
	5 0.1 m	<0.1		25 RUN	30%
	6 apart	<0.1		26 Dissolved Oxygen	
	7	<0.1		.	
	8	<0.1		.	
	9	<0.1		n 10.31	ppm
	10	<0.1		122.1	%

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alan W. Mitchell Date: May 23, 2007

Organization: F&E, Inc. Position: Environmental Engineer

February 5, 2007

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 1220 Site # 3

Transect	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
D	1 wetted width	<0.1		1	Channel Feature:
	2 8.0 m	0.1		2	
	3	0.1		3	
	4 measurements	0.1		4	Dissolved Oxygen
	5 0.8 m	0.2		5	23.3 °C
	6 apart	0.2		6	10.70 ppm
	7	0.3		7	122.5 %
	8	0.4		8	POOL 70%
	9	0.6		9	RIFFLE 30%
	10	0.3		10	
E	1 wetted width	0.1		11	
	2 9.5 m	0.5		12	Channel Feature:
	3	0.7		13	POOL 100%
	4 measurements	0.8		14	
	5 0.9 m	0.7		15	Dissolved Oxygen:
	6 apart	0.8		16	
	7	0.6		17	10.51 ppm
	8	0.6		18	122.4 %
	9	0.3		19	23.5 °C
	10	0.1		20	
F	1 wetted width	<0.1		22	
	2 4.5 m	0.2		23	Channel Feature:
	3	0.3		24	
	4 measurements	0.3		25	
	5 0.4 m	0.2		26	Dissolved Oxygen
	6 apart	0.2			
	7	0.2			10.78 ppm
	8	0.1			127.2 %
	9	<0.1		n	26.2 °C
	10	<0.1			POOL 100%

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: John H. Mitchell

Date: May 23, 2007

Organization: EAF, Inc.

Position: Environmental Engineer

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 1220

Site # 3

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
Transect G					
1	wetted width	<0.1		1	Channel Feature:
2	3.0 m	0.2		2	
3		0.2		3	
4	measurements	0.1		4	Dissolved Oxygen
5	0.3 m	0.1		5	23.6 °C
6	apart	0.1		6	10.78 ppm
7		<0.1		7	125.1 %
8		<0.1		8	POOL 30%
9		<0.1		9	RUN 30%
10		<0.1		10	
				11	
Transect H					
1	wetted width	<0.1		12	Channel Feature:
2	4.5 m	0.3		13	
3		0.6		14	
4	measurements	0.7		15	Dissolved Oxygen:
5	0.4 m	0.5		16	
6	apart	0.5		17	10.93 ppm
7		0.3		18	129.8 %
8		0.2		19	23.7 °C
9		0.2		20	POOL 100%
10		0.1		21	
				22	
Transect I					
1	wetted width	<0.1		23	Channel Feature:
2	8.0 m	<0.1		24	
3		<0.1		25	
4	measurements	<0.1		26	Dissolved Oxygen
5	0.8 m	<0.1			
6	apart	<0.1			
7		0.2			10.30 ppm
8		0.2			122.1 %
9		0.2		n	23.6 °C
10		<0.1			RIFFLE 30%
					RUN 30%
					POOL 40%

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alan W. Mitchell

Date: May 23, 2007

Organization: EAE, Inc.

Position: Environmental Engineer

February 5, 2007

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

WBID # 1220 Site # 3

Transect	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
J	1 wetted width	<0.1		1	Channel Feature:
	2 2.5 m	<0.1		2	
	3	0.2		3	
	4 measurements	0.2		4	Dissolved Oxygen
	5 0.2 m	0.2		5	
	6 apart	0.2		6	10.20
	7	0.1		7	120.0 ppm
	8	0.1		8	23.2 %
	9	<0.1		9	23.2 °C
	10	<0.1		10	100 L 100%
K	1 wetted width	<0.1		11	
	2 2.5 m	0.1		12	Channel Feature:
	3	0.2		13	
	4 measurements	0.2		14	
	5 0.2 m	0.2		15	Dissolved Oxygen:
	6 apart	0.2		16	
	7	0.1		17	9.75 ppm
	8	0.1		18	114.9 %
	9	<0.1		19	23.5 °C
	10	<0.1		20	100 L 40%
L	1 wetted width			21	RUN 60%
	2			22	
	3			23	Channel Feature:
	4			24	
	5 measurements			25	
	6			26	Dissolved Oxygen
	7				
	8				
	9			n	
	10				

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: Alan R. Mitchell

Date: May 23, 2007

Organization: EAE, Inc.

Position: Environmental Engineer

February 5, 2007

WBID# 220  
Site# 4

**Field Data Sheets for Recreational Use Stream Surveys**  
**Data Sheet B - Site Characterization**  
(must be completed for each site)

Date & Time: 06/20/07 16:45	Site Location Description (e.g., road crossing): Bridge Crossing @ RD 951
Personnel (Data Collectors): Lunt & Bartlett	
Current Weather Conditions: Overcast, ~75	Facility Name: MONTROSE WWTF
Weather Conditions for Past 10 days: Fair, Rain	Permit Number: MO 0091723
Drought Conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

**Site Locations:**

LOCATION COORDINATES (UNIVERSAL TRANSVERSE MERCATOR PROJECTION IN METERS)	
Site GPS Coordinates: UTM X: 381,26916	Y: 93,93457
HORIZONTAL COLLECTION METHOD (Indicate the method used to determine the locational data)	
Global Positioning System (GPS)	Interpolation
Static Mode	Topographic Map or DRG
Dynamic Mode (Kinematic)	Aerial Photograph or DOQQ
Precise Positioning Service	Satellite Imagery
Signal Averaging	Interpolation Other
Real Time Differential Processing	
HORIZONTAL ACCURACY ESTIMATE	
GPS Data Quality	Interpolation Data Quality
FOM ± _____ Meters	Source Map Scale: 1:24,000 1:100,000 Other _____ ± _____ Feet or ± _____ Meters
EPE ± _____ Feet or ± _____ Meters	
PDOP	

**Photos:**

Upstream Photos		Downstream Photos		Other Photos	
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
1220-11/12	Trans. J-K	1220-9/10	Trans. B-A		

**Uses Observed\*:** (Uses actually observed at time of survey.)

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:

Describe: (Include number of individuals recreating, photo-documentation of evidence of recreational uses, etc. Use *Data Sheet D- Recreational Use Interview* when conducting interviews.)

**Surrounding Conditions\*:** (Mark all that promote or impede recreational uses. Attach photos of evidence or unusual items of interest.)

<input type="checkbox"/> City/county parks	<input type="checkbox"/> Playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Campgrounds
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> State parks	<input type="checkbox"/> National forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkway
<input type="checkbox"/> No trespass sign	<input checked="" type="checkbox"/> Fence	<input checked="" type="checkbox"/> Steep slopes	<input type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Comments:				

**Indications of Human Use\*:** (attach photos)

<input checked="" type="checkbox"/> Roads	<input type="checkbox"/> Rope swings	<input type="checkbox"/> Foot paths/prints	<input type="checkbox"/> Dock/platform	<input checked="" type="checkbox"/> Livestock Watering	<input type="checkbox"/> RV / ATV Tracks
<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Other:	
Comments: RD 951					

\* Page Two – Data Sheet B for WBID # 1270:  
Stream Morphology: Site 4

CHANNEL FEATURE %  
RUN: 90 RIFFLE: \_\_\_\_\_  
~~RIFFLE~~  
POOL: 10%

Upstream View's Physical Dimensions: Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Downstream View's Physical Dimensions: Is there any water present at this view? ☐ Yes ☐ No

If so, is there an obvious current? ☐ Yes ☐ No

Select one of the following channel features:

Channel Feature	Distance from access (m)	Width (m)	Length (m)	Median Depth (m)	Max. Depth (m)
RIFFLE					
RUN					
POOL					

Substrate\*: (These values should add up to 100%.)

<u>50</u> % Cobble	<u>20</u> % Gravel	<u>10</u> % Sand	<u>10</u> % Silt	<u>10</u> % Mud/Clay	% Bedrock
--------------------	--------------------	------------------	------------------	----------------------	-----------

Aquatic Vegetation\*: (Note amount of vegetation or algal growth at the assessment site)

limited aquatic vegetation

Water Characteristics\*: (Mark all that apply.)

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

Comments: Please attach any additional comments () to this form.

\*This information is not to be used solely for removal of a recreational use designation but rather is to provide a more comprehensive understanding of water conditions. Consequently, this information is not intended to directly influence a decision on the recreation use analysis but may point to conditions that need further analysis or that effect another use.

Please verify that you have completed all sections, checked all applicable boxes and that everything is complete.

Surveyor's Signature: [Signature] Date of Survey: 6/20/07

Organization: BWR CORP. Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

Site 4

TA

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 WETTED WIDTH	<0.1		1 CHANNEL FEATURE:	
2 1.5	0.1		2 RUN	
3	0.1		3	
4 MEASUREMENTS	0.1		4 DISSOLVED OXYGEN:	
5 0.15 m	0.1		5 7.18	
6 APART	0.1		6	ppm
7	0.1		7	
8	0.1		8	
9	0.1		9	
10	0.1		10	
			11	
1 WETTED WIDTH	0.1		12 CHANNEL FEATURE:	
2 1.3	0.1		13 RUN	
3	<0.1		14	
4 MEASUREMENTS	<0.1		15 DISSOLVED OXYGEN:	
5 0.13 m	<0.1		16 7.20	
6 APART	<0.1		17	ppm
7	<0.1		18	
8	<0.1		19	
9	<0.1		20	
10	<0.1		21	
			22 CHANNEL FEATURE:	
1 WETTED WIDTH	<0.1		23 RUN	
2 1.3	<0.1		24	
3	0.1		25 DISSOLVED OXYGEN:	
4 MEASUREMENTS	0.1		26 7.10	
5 0.13 m	<0.1		.	ppm
6 APART	<0.1		.	
7	<0.1		.	
8	<0.1		n	
9	<0.1			
10	<0.1			

TB

TC

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 4/20/07

Organization: BWR CORP. Position: ENV. Sci.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

SITE 4

T<sub>D</sub>

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1	WETTED WIDTH	< 0.1		1	CHANNEL FEATURE :
2	4.2	< 0.1		2	RUN
3		< 0.1		3	
4	MEASUREMENTS	0.1		4	DISSOLVED OXYGEN :
5	0.42 m	0.1		5	7.00
6	APART	0.1		6	
7		0.1		7	ppm
8		0.2		8	
9		0.1		9	
10		0.1		10	
				11	CHANNEL FEATURE :
1	WETTED WIDTH	0.1		12	RUN
2	4.5	0.2		13	
3		0.2		14	DISSOLVED OXYGEN :
4	MEASUREMENTS	0.2		15	6.75
5	0.45 m	0.2		16	
6	APART	0.3		17	ppm
7		0.3		18	
8		0.3		19	
9		0.20		20	
10		0.1		21	
				22	CHANNEL FEATURE :
1	WETTED WIDTH	< 0.1		23	RUN
2	4.7	0.2		24	
3		0.4		25	
4	MEASUREMENTS	0.4		26	DISSOLVED OXYGEN :
5	0.4 m	0.3		.	6.96
6	APART	0.2		.	
7		0.1		.	ppm
8		< 0.1		n	
9		< 0.1			
10		< 0.1			

E

F

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed: [Signature] Date: 6/20/07

Organization: 6/20/07 Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

Site 4

T<sub>G</sub>

	Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1	WETTED WIDTH	0.1		1	CHANNEL FEATURE :
2	4.4	0.3		2	RUN
3		0.4		3	
4	MEASUREMENTS	0.5		4	DISSOLVED OXYGEN :
5	0.44 m	0.5		5	6.52
6	APART	0.4		6	
7		0.2		7	ppm
8		0.1		8	
9		0.1		9	
10		0.1		10	
				11	
1	WETTED WIDTH	0.1		12	CHANNEL FEATURE :
2	3.8	0.1		13	Pool
3		0.2		14	
4	MEASUREMENTS	0.2		15	DISSOLVED OXYGEN :
5	0.38 m	0.3		16	7.03
6	APART	0.3		17	
7		0.3		18	ppm
8		0.2		19	
9		0.1		20	
10		0.1		21	
				22	
1	WETTED WIDTH	0.1		23	CHANNEL FEATURE :
2	3.0	0.1		24	RUN
3		0.1		25	
4		0.1		26	DISSOLVED OXYGEN :
5	MEASUREMENTS	0.1		.	10.94
6	0.30 m	0.2		.	
7	APART	0.1		.	ppm
8		0.2		n	
9		0.2			
10		0.1			

T<sub>H</sub>

T<sub>I</sub>

If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

I, the undersigned, hereby affirm to the best of my knowledge, that all information reported on this UAA datasheet is true and accurate.

Signed:                     

Date: 6/20/07

Organization: BWR CORP.

Position: ENV. SCI.

Data Sheet C – Cross-Sectional Depth Measurements (for estimation of median depth)

Site 4

TJ

K

Distance from Stream edge	Depth	Rank	Assigned Rank	Sorted depth
1 WETTED WIDTH	40.1		1 CHANNEL FEATURE:	
2 5.2	40.1		2 RUN	
3	0.1		3	
4 MEASUREMENTS	0.1		4 DISSOLVED OXYGEN:	
5 0.52 m	0.1		5 <del>5.2</del> 6.93	
6 APART	40.1		6	ppm
7	0.2		7	
8	0.3		8	
9	0.1		9	
10	0.1		10	
			11	
1 WETTED WIDTH	40.1		12 CHANNEL FEATURE:	
2 7.7	40.1		13 <del>5.2</del> RUN	
3	40.1		14	
4 MEASUREMENTS	40.1		15 DISSOLVED OXYGEN:	
5 0.77 m	40.1		16 6.80	
6 APART	40.1		17	ppm
7	40.1		18	
8	40.1		19	
9	40.1		20	
10	40.1		21	
			22	
			23	
			24	
			25	
			26	
			.	
			.	
			.	
			n	

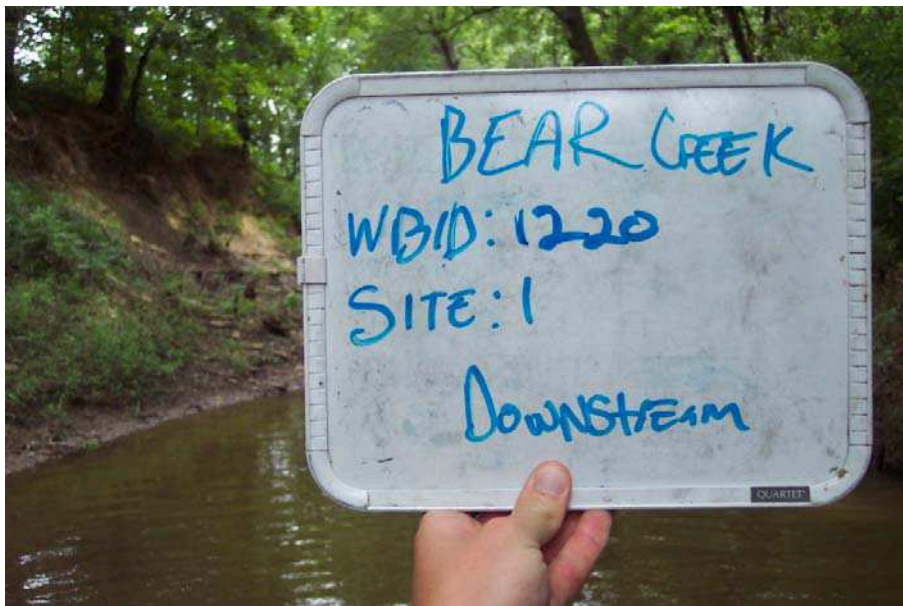
If there is an odd number of entries find middle rank  $[(n+1)/2]$ . The corresponding sorted value depth to the middle rank is the median depth.

If there is an even number of entries, the median depth corresponds to the arithmetic average of the two depth values surrounding the middle rank.

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Signed: [Signature] Date: 6/20/07

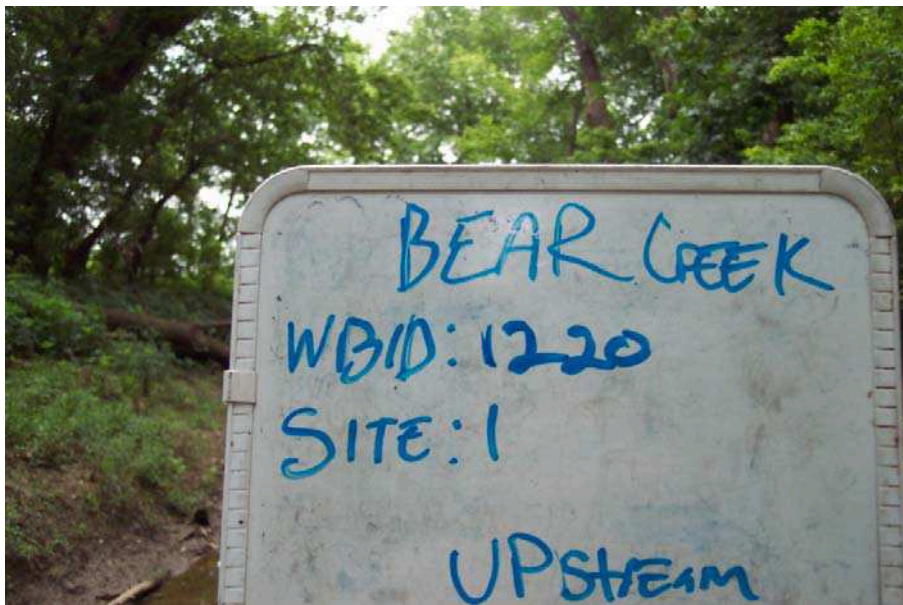
Organization: BWR CORP. Position: ENV. SCI.



Downstream (Site 1) of Bear Creek



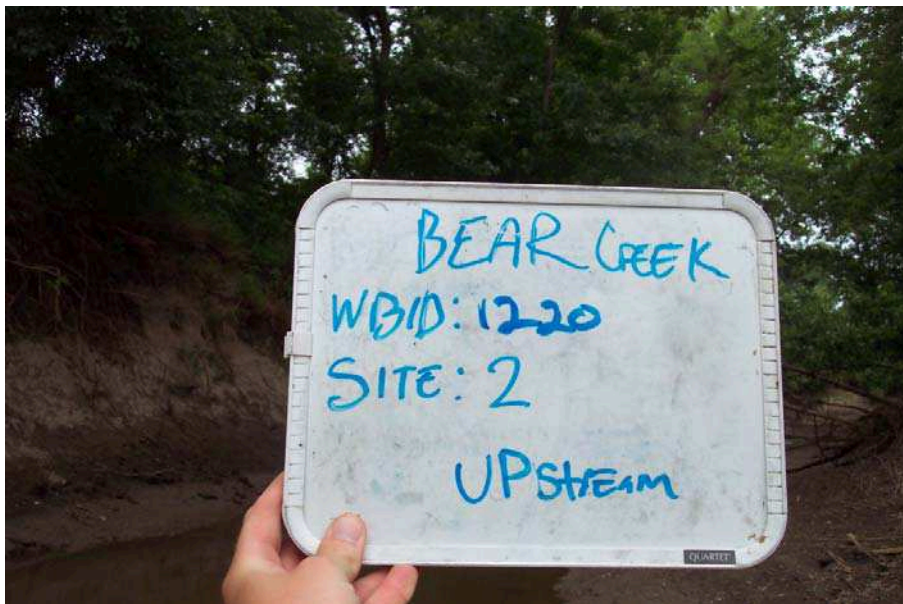
Downstream (Site 1) of Bear Creek



Upstream (Site 1) of Bear Creek



Upstream (Site 1) of Bear Creek



Upstream (Site 2) of Bear Creek



Upstream (Site 2) of Bear Creek



Downstream (Site 2) of Bear Creek



Downstream (Site 2) of Bear Creek



Downstream (Site #3) of Bear Creek.



Downstream (Site #3) of Bear Creek.



Upstream (Site #3) of Bear Creek.



Upstream (Site #3) of Bear Creek.



Downstream (Site 4) of Bear Creek



Downstream (Site 4) of Bear Creek



Upstream (Site 4) of Bear Creek



Upstream (Site 4) of Bear Creek